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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,447	10/29/2003	Christopher C. Beatty	100204750-1	6005

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EXAMINER

CHUO, TONY SHENG HSIANG

ART UNIT	PAPER NUMBER
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1745

MAIL DATE	DELIVERY MODE
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06/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/696,447	Applicant(s) BEATTY ET AL.	
	Examiner Tony Chuo	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-33, 35-41, 49 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-33, 35-41, 49 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/16/07 has been entered.

Response to Amendment

2. Claims 24-33, 35-41, and 49-50 are currently pending. Claims 1-23, 34, and 42-48 have been cancelled. The amend claims do overcome the previously stated 102/103 rejection of claims 24-37 and the 103 rejections of claims 38-41. However, upon further consideration, claims 24-33, 35-41, and 49-50 are rejected under the following new 112, 102/103, and 103 rejections.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 24-33, 35-41, and 50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to

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reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The addition of the substrate as being part of the fuel cell is not supported by the specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 24-33, 35-41, and 50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear whether the substrate is part of the fuel cell or the substrate is removed so that only the metal oxide film is part of the fuel cell. It is also unclear whether the substrate that has the deposited third solution in line 12 is the same as the substrate with the metal oxide film in line 5.

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 24-33, 35-37, 49, and 50 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hata et al (US 6902790).

The Hata reference discloses an electrode sheet of a solid oxide fuel cell comprising zirconia or mixed oxides; and a solid electrolyte film of a solid oxide fuel cell comprising zirconia and ceria, wherein the electrode or electrolyte film also includes an organic binder such as vinyl alcohol based resins, acrylate based copolymers, and cellulose (See column 12, lines 4-66 and column 13, lines 19-27). It also discloses a proportion of the binder to the ceramic material that is 5 to 30 parts by weight (See column 13, lines 61-62). It also discloses the thickness of the electrolyte film or electrode sheet that is in a range of 10 to 500 μm (See column 12, lines 49-51).

Examiner's note: The fuel cell is construed as not including the substrate. Therefore, the limitation "established on a substrate selected from single crystal silicon, polycrystalline silicon, and silicon oxide containing dielectric substrates" is not given patentable weight. It is further noted that the instant claim is being construed as product-by-process and that the product itself does not depend on the process of making it. Accordingly, in product-by-process claims, the patentability of the product does not depend on its method of production. Specifically, the patentability of the fuel cell does not depend on the process of making the metal oxide film. In that, the product in the instant claims is the same as or is obvious over the product of the prior art.

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Therefore, the claims are anticipated by Hala et al. However, if the claims are not anticipated, the claims are obvious as it has been held similar products claimed in product-by-process limitations are obvious (*In re Brown* 173 USPQ 685 and *In re Fessman* 180 USPQ 324, See MPEP 2113: Product-by-Process claims).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hata et al (US 6902790) in view of Borglum et al (US 6139985). The Hata reference is applied to claim 24 for reasons stated above. However, Hala et al does not expressly teach a metal oxide film that has a thickness ranging between about 0.05 μm and about 5.0 μm . The Borglum reference teaches a CeO_2 film that has a thickness of 0.001 micrometers to about 5 micrometers (See column 5, lines 57-60). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Hata fuel cell to include a metal oxide film that has a thickness ranging between about 0.05 μm and about 5.0 μm in order to prevent problems due to mismatch of thermal expansion of the different components of the fuel cell. In addition, product claims with numerical ranges which overlap prior art were held to have been obvious (*In re Wertheim* 191 USPQ 90 (CCPA 1976)).

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12. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hata et al (US 6902790) in view of Ishihara et al (US 5175063). The Hata reference is applied to claim 24 for reasons stated above. However, Hata et al does not expressly teach an electronic device comprising a load and the fuel cell of claim 24 connected to the load. The Ishihara reference teaches a fuel cell generator comprising a SOFC element array "11" connected to a load "40" (See Figure 9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Hata fuel cell to include a load connected to the fuel cell in order to efficiently utilize the power generated by the fuel cell in a practical application.

Response to Arguments

13. Applicant's arguments with respect to claim 24-41 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Chuo whose telephone number is (571) 272-0717. The examiner can normally be reached on M-F, 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TC


JONATHAN CREPEAU
PRIMARY EXAMINER